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(FILE 'HOME' ENTERED AT 14:45:59 ON 15 JUL 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED  
AT 14:46:22 ON 15 JUL 2003

L1 1852 S TRANSGENIC (L) (CHICKEN OR HEN OR FOWL OR BIRD)  
L2 72 S L1 AND (INTERFERON OR ERYTHROPOIETIN OR EPO OR IFN)  
L3 39 DUP REM L2 (33 DUPLICATES REMOVED)  
L4 17 S L3 AND PY<=1997  
L5 17 SORT L4 PY

FILE 'STNGUIDE' ENTERED AT 14:52:25 ON 15 JUL 2003

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED  
AT 14:54:01 ON 15 JUL 2003

E IVARIE ROBERT?/AU  
L6 21 S E2  
L7 3 S L6 AND TRANSGEN?  
L8 3 DUP REM L7 (0 DUPLICATES REMOVED)  
L9 6 S L6 AND TRANS?  
L10 29 S E1  
L11 17 S L10 AND TRANS?  
L12 5 S L11 AND EGG?

=> d an ti so au ab pi l12 1-5

L12 ANSWER 1 OF 5 MEDLINE  
AN 2002719100 MEDLINE  
TI Avian **transgenesis**: progress towards the promise.  
SO TRENDS IN BIOTECHNOLOGY, (2003 Jan) 21 (1) 14-9. Ref: 76  
Journal code: 8310903. ISSN: 0167-7799.  
AU Ivarie Robert  
AB The hen has long held promise as a low cost, high-yield bioreactor for the production of human biopharmaceuticals in **egg** whites. A typical **egg** white contains 3.5-4.0 grams of protein, more than half of which comes from a single gene (ovalbumin). Harnessing the power of the gene to express a recombinant protein could yield up to a gram or more of the protein in the naturally sterile **egg**. Accordingly, a major effort has been underway for more than a decade to develop robust methods for modification of the chicken genome. This effort intensified in the mid-1990s when several avian **transgenic** companies entered the scene. Progress has been made in that time but much remains to be done.

L12 ANSWER 2 OF 5 MEDLINE  
AN 2002190519 MEDLINE  
TI Expression of exogenous protein in the **egg** white of **transgenic** chickens.  
SO NATURE BIOTECHNOLOGY, (2002 Apr) 20 (4) 396-9.  
Journal code: 9604648. ISSN: 1087-0156.  
AU Harvey Alex J; Speksnijder Gordon; Baugh Larry R; Morris Julie A;  
Ivarie Robert  
AB Using a replication-deficient retroviral vector based on the avian leukosis virus (ALV), we inserted into the chicken genome a **transgene** encoding a secreted protein, beta-lactamase, under the control of the ubiquitous cytomegalovirus (CMV) promoter. Biologically active beta-lactamase was secreted into the serum and **egg** white of four generations of **transgenic** chickens. The expression levels were similar in successive generations, and expression levels in the magnum of the oviduct were constant over at least 16 months in **transgenic** hens, indicating that the **transgene** was stable and not subject to silencing. These results support the potential of the hen as a bioreactor for the production of commercially valuable, biologically active proteins in **egg** white.

L12 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS  
AN 2002:931060 CAPLUS  
DN 138:215789  
TI Avian **transgenesis**: progress towards the promise  
SO Trends in Biotechnology (2002), Volume Date 2003, 21(1), 14-19

CODEN: TRBIDM; ISSN: 0167-7799

AU **Ivarie, Robert**

AB A review. The hen has long held promise as a low cost, high-yield bioreactor for the prodn. of human biopharmaceuticals in **egg** whites. A typical **egg** white contains 3.5-4.0 g of protein, more than half of which comes from a single gene (ovalbumin). Harnessing the power of the gene to express a recombinant protein could yield up to a gram or more of the protein in the naturally sterile **egg**. Accordingly, a major effort has been underway for more than a decade to develop robust methods for modification of the chicken genome. This effort intensified in the mid-1990s when several avian **transgenic** companies entered the scene. Progress has been made in that time but much remains to be done.

L12 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2002:291304 CAPLUS

DN 137:135738

TI Expression of exogenous protein in the **egg** white of **transgenic** chickens

SO Nature Biotechnology (2002), 20(4), 396-399

CODEN: NABIF9; ISSN: 1087-0156

AU Harvey, Alex J.; Speksnijder, Gordon; Baugh, Larry R.; Morris, Julie A.; **Ivarie, Robert**

AB Using a replication-deficient retroviral vector based on the avian leukosis virus (ALV), the authors inserted into the chicken genome a **transgene** encoding a secreted protein, .beta.-lactamase, under the control of the ubiquitous cytomegalovirus (CMV) promoter. Biol. active .beta.-lactamase was secreted into the serum and **egg** white of four generations of **transgenic** chickens. The expression levels were similar in successive generations, and expression levels in the magnum of the oviduct were const. over at least 16 mo in **transgenic** hens, indicating that the **transgene** was stable and not subject to silencing. These results support the potential of the hen as a bioreactor for the prodn. of com. valuable, biol. active proteins in **egg** white.

L12 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2000:145005 CAPLUS

DN 132:204036

TI Direct avian oviduct **transgenesis** for exogenous protein expression in poultry **eggs**

SO PCT Int. Appl., 54 pp.

CODEN: PIXXD2

IN **Ivarie, Robert**; Harvey, Alex J.; Murphy, George F., Jr.; Rapp, Jeffrey C.

AB Methods for prepg. **transgenic** avians which express exogenous protein substantially only in their oviducts are disclosed. Each of the methods comprises delivering nucleic acid expression cassettes directly to the oviducts of the avians. The exogenous protein expressed by the expression cassette is secreted into the lumen of the avian oviduct and secreted into the **eggs** of the **transgenic** avians. Methods for prepg. **eggs** which contain exogenous protein, such as human interferon, and methods for the prodn. of proteins are also disclosed. The methods for direct oviduct **transgenesis** may also be used to assess the suitability of expression cassettes or exogenous proteins for expression in the avian oviduct.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2000011151	A2	20000302	WO 1999-US19393	19990825
	WO 2000011151	A3	20000615		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9956907	A1	20000314	AU 1999-56907	19990825
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L5 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2003 ACS  
AN 1995:645229 CAPLUS  
DN 123:49258  
TI Chicken **interferon** gene, its sequence and recombinant  
expression, and its antiviral action  
SO PCT Int. Appl., 46 pp.  
CODEN: PIXXD2  
IN Sekellick, Margaret J.; Marcus, Philip I.; Ferrandino, Anthony F.  
AB A **chicken interferon** gene sequence and its deduced  
amino acid sequence is provided. There is also disclosed a method of  
producing biol. active **chicken interferon**  
recombinantly, a method of isolating other non-mammalian  
**interferon** genes, a method of making a **transgenic**  
**fowl** having the **chicken interferon** gene  
incorporated therein, and a method for delivery of the **chicken**  
**interferon** in the **bird**, such as by genetic immunization  
or aerosol. Expression of the gene yields functional **chicken**  
**interferon**. Thus, **chicken interferon** cDNA was  
isolated which coded for the complete mature **interferon** sequence  
of 162 amino acids plus a 31-residue signal peptide. A cDNA probe was  
also isolated, consisting of 269 nucleotides with a 5'-primer region of 32  
bases, a 3' primer region of 20 bases, and a 217-base partial sequence of  
the **chicken interferon** gene. The probe can be used in  
screening a non-mammalian cDNA library by std. procedures. Glycosylated  
recombinant **chicken interferon** could be expressed in  
transfected mouse L(Y) cells, human WISH cells, and COS-1 cells, and  
displayed antiviral activity. **Chicken interferon** cDNA  
can be integrated into plasmid or retroviral vectors under the control of  
the **chicken** metallothionein promoter (for Cd or Zn induction)  
and introduced into sperm, egg, or zygote of **fowls** in order to  
prevent viral and/or parasitic infection.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9511302	A1	19950427	WO 1994-US11660	19941021 <--
W: AU, BR, CA, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5641656	A	19970624	US 1993-139909	19931022 <--
US 5885567	A	19990323	US 1994-308821	19940919
AU 9480771	A1	19950508	AU 1994-80771	19941021 <--
AU 684849	B2	19980108		
EP 724638	A1	19960807	EP 1994-931841	19941021 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				

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E IVARIE ROBERT?/AU  
L6 21 S E2  
L7 3 S L6 AND TRANSGEN?  
L8 3 DUP REM L7 (0 DUPLICATES REMOVED)

=> d an ti so au ab pi l8 2

L8 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS  
AN 1999:271485 CAPLUS  
DN 130:277660  
TI Vectors comprising a magnum-specific promoter for avian  
**transgenesis**  
SO PCT Int. Appl., 67 pp.  
CODEN: PIXXD2  
IN Ivarie, Robert D.; Harvey, Alex J.; Morris, Julie A.; Liu,  
Guodong

AB This invention provides vectors and methods for the stable introduction of  
exogenous nucleic acid sequences into the genome of a bird and for  
expressing said exogenous sequences to alter the phenotype of the bird or  
to produce desired proteins. In particular, **transgenic** chickens  
are produced which express exogenous sequences in their oviducts. Eggs  
which contain exogenous proteins are also produced. In one specific  
embodiment, an avian leukosis virus retroviral vector is used which  
comprises a modified pNLB plasmid contg. an exogenous gene that is  
inserted downstream of a segment of the ovalbumin promoter region. The  
total length of the ovalbumin promoter segment may be from about 0.88 kb  
to about 7.4 kb in length, and includes both the steroid-dependent  
regulatory element and the neg. regulatory element. An RNA copy of the  
modified retroviral vector, packaged into viral particles is used to  
infect embryonic blastoderms which develop into **transgenic**  
birds. Alternatively, helper cells which produce the retroviral  
transducing particles are delivered to the embryonic blastoderm.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9919472	A1	19990422	WO 1998-US21975	19981015
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2307840	AA	19990422	CA 1998-2307840	19981015
AU 9911899	A1	19990503	AU 1999-11899	19981015
AU 752946	B2	20021003		
EP 1023442	A1	20000802	EP 1998-954994	19981015
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
JP 2001520009	T2	20011030	JP 2000-516025	19981015

L Number	Hits	Search Text	DB	Time stamp
1	1695	Transgenic WITH (chicken OR bird or fowl or turkey or hen)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:20
7	661	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:12
13	16	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME interferon)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
19	7	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME erythropoietin)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
25	21	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME interferon)) or (((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME erythropoietin))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
31	28	Transgenic WITH (chicken OR bird or fowl or turkey or hen).clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:20
38	16	(US-6395961-\$ or US-6333192-\$ or US-6156569-\$ or US-5897998-\$ or US-5784992-\$ or US-5162215-\$ or US-H001065-\$ or US-4997763-\$ or US-6515199-\$).did. or (US-20020116732-\$ or US-20020108132-\$ or US-20020028488-\$ or US-20010039668-\$ or US-20030126629-\$ or US-20030126628-\$ or US-20030074681-\$).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:29
41	16	((US-6395961-\$ or US-6333192-\$ or US-6156569-\$ or US-5897998-\$ or US-5784992-\$ or US-5162215-\$ or US-H001065-\$ or US-4997763-\$ or US-6515199-\$).did. or (US-20020116732-\$ or US-20020108132-\$ or US-20020028488-\$ or US-20010039668-\$ or US-20030126629-\$ or US-20030126628-\$ or US-20030074681-\$).did.) and stage	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:29
-	4905	800/\$?.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:07
-	835	800/\$?.ccls. and (chick\$10 or bird or fowl)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:25
-	34	(800/\$?.ccls. and (chick\$10 or bird or fowl)) and (transgen\$10 ADJ (chick\$10 or bird or fowl))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:08
-	12	(US-4997763-\$ or US-H001065-\$ or US-5162215-\$ or US-5897998-\$ or US-6156569-\$ or US-6333192-\$ or US-6395961-\$ or US-5784992-\$).did. or (US-20010039668-\$ or US-20020028488-\$ or US-20020108132-\$ or US-20020116732-\$).did.	USPAT; US-PGPUB	2002/09/16 13:21
-	2	((US-4997763-\$ or US-H001065-\$ or US-5162215-\$ or US-5897998-\$ or US-6156569-\$ or US-6333192-\$ or US-6395961-\$ or US-5784992-\$).did. or (US-20010039668-\$ or US-20020028488-\$ or US-20020108132-\$ or US-20020116732-\$).did.) and (EPO or interferon\$10)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:25

-	51	(800/\$?.ccls. and (chick\$10 or bird or fowl)) and EPO	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:27
-	1213	EPO and (chick\$10 or bird or fowl)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:26
-	486	(EPO and (chick\$10 or bird or fowl)) and transgenic\$10	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:26
-	31	(800/\$?.ccls. and (chick\$10 or bird or fowl)) and Erythropoietin\$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:34
-	110	(800/\$?.ccls. and (chick\$10 or bird or fowl)) and interferon\$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:42
-	300	(800/\$?.ccls. and (chick\$10 or bird or fowl)) and egg\$2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:42
-	65	((800/\$?.ccls. and (chick\$10 or bird or fowl)) and egg\$2) and (interferon or erythropoietin)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:43